

REMARKS

Reconsideration of this application is respectfully requested in view of the foregoing amendment and the following remarks.

Claims 1, 7, 9, 11-12, and 14-16 are currently amended, claims 5-6, 8, and 10 are original claims, and claims 2-4, 13, and 17 are canceled. Therefore, Claims 1, 5-12, and 14-16 are currently pending in the application and subject to examination. In the Office Action mailed October 20, 2005, the Examiner rejected claims 1, 3, 4, 7, 9 and 11-17 under 35 U.S.C. § 103(a) as being unpatentable over Yamazaki et al. (United States Patent Application Publication No. US 2002/0021268 A1, "Yamazaki") in view of Yeo et al. (United States Patent Application Publication No. 2001/0054998 A1, "Yeo"). The Examiner objected to claims 5, 6, 8, and 10 as depending from rejected base claims, but noting that these claims would be allowable if rewritten in independent form.

To the extent that the rejections apply to claims 1, 7, 9, 11-12, and 14-16 the Applicant hereby traverses the rejections, as follows.

Amended claim 1 is directed to an organic electroluminescent display device having an electroluminescent element that is formed in a longitudinally oblong shape in each pixel, a drive thin-film transistor formed in each pixel and that feeds a current to the organic electroluminescent element to make the organic to make the organic electroluminescent element emit light, and a control thin-film transistor that controls operation of the drive thin-film transistor. The drive thin-film transistor is formed in a laterally oblong shape. The organic electroluminescence element is arranged so that a length direction thereof is parallel to a source signal line. The drive thin-film transistor has a channel region in an elongate shape, the channel region arranged so that a

length direction thereof is parallel to the gate signal line. The drive thin-film transistor and the control thin film transistor have a semiconductor layer formed of amorphous silicon.

Organic electroluminescent display devices of this type require large currents to be supplied to pixel electrodes to make the light emitting layer emit light. Therefore, polysilicon TFT are suitable as drive TFTs for supplying currents to the pixel electrodes because polysilicon offers high mobility, supplying large voltages and currents in a short amount of time.

LCD displays operate on a different principle, as a voltage-application device that functions by applying a predetermined voltage to pixel electrodes, thereby controlling the electric field across a liquid crystal layer. The amorphous silicon used in LCD displays is unsuitable for use in typical organic electroluminescent displays because of its low mobility.

The present invention provides a design and arrangement of light emitting parts and TFTs that widens the channel regions of the TFTs. The design of the present invention overcomes the drawbacks of low mobility in amorphous silicon allowing its use in organic electroluminescent display devices by the drive thin-film transistor having a channel region formed in an elongate shape, the channel region arranged so that a length direction thereof is parallel to the gate signal line, which compensates for the low mobility of amorphous silicon.

In contrast, Yamazaki does not teach an organic electroluminescent display as claimed in claims 1 and 11, including amorphous silicon. The display design of Yamazaki is not suitable for use with amorphous silicon. Nothing in Yamazaki's design

would compensate for the low mobility of amorphous silicon. Furthermore, Yamazaki specifically teaches the use of polysilicon instead of amorphous silicon on Page 1, Paragraph 4, stating, "since a TFT using a polysilicon film has a higher field-effect mobility . . . than that of a conventional TFT using an amorphous silicon film, a high speed operation is achieved . . . it becomes possible [with the use of polysilicon] to control a pixel by a driving circuit formed on the same substrate as the pixel." The entire design of Yamazaki involves the use of polysilicon rather than amorphous silicon.

Yeo, which is cited for the use of amorphous silicon, teaches the use of amorphous silicon in an LCD display. As discussed above, LCD displays operate on a completely different principle than organic electroluminescent displays and do not require high-current TFTs. The amorphous silicon TFT of Yeo could not be combined with the organic display design of Yamazaki to create a display device with satisfactory performance. Yeo, as an LCD, does not require a high mobility material, and does not teach a widened channel region of the TFT, which would compensate for the low mobility of amorphous silicon.

Regarding claim 1, the Applicants submit that even assuming that Yamazaki and Yeo are combined [not admitted], the cited prior art fails to teach at least a display device wherein the channel region is formed in an elongate shape, the channel region arranged so that a length direction thereof is parallel to the gate signal line. According to the present invention, the channel region, as claimed is such that the largest possible current can be passed therethrough. Therefore, the Applicants submit that claim 1, as amended is allowable over the cited prior art, for at least this reason. As claim 1 is allowable, claims 5-10, which depend from claim 1, are likewise allowable.

In addition, regarding claim 7, the Applicants submit that neither Yamazaki or Yeo disclose or suggest a display device comprising a power feed line that is arranged substantially parallel to the gate signal line, as claimed in amended claim 7. By contrast, in Figure 8 of Yamazaki, the power feed lines 816 are perpendicular to the gate signal lines 803. Therefore, the Applicants submit that claim 7, as amended is allowable over the cited prior art for at least this reason.

In addition, regarding claim 9, the Applicants submit that neither Yamazaki or Yeo disclose or suggest at least a display device comprising the plurality of power feed lines arranged between the thin-film transistor and the control thin-film transistor within a same pixel, as claimed in amended claim 9. By contrast, Figure 8 of Yamazaki shows the current supply lines 816 arranged between the drive TFT 806 of one pixel and the control TFT 802 of the next pixel. Therefore, the Applicants submit that claim 9, as amended, is allowable over the cited prior art, for at least this reason.

Regarding claim 11, the Applicants submit that neither Yamazaki or Yeo disclose or suggest at least a bank layer formed so as to overlap the drive thin-film transistor, a cut formed in the bank layer between the organic electroluminescence element and the drive thin-film transistor, and a light-shielding film formed on the bank layer at least in the portion thereof near the cut. By contrast, the cut in the bank layer 390 taught by Yamazaki is formed above the light emitting element 389, 391, 392, 393 rather than between the drive TFT 504 and the light emitting element. (See Figure 6 of Yamazaki). The cut of Yamazaki does not satisfactorily shield the light emitting element and the TFT and is likely to leak light from the light emitting element to the TFT. The present invention, as claimed in amended claim 11, reduces the light leakage from the organic

electroluminescence element to the semiconductor layers of the TFT. Therefore, the Applicants submit that claim 11, as amended, is allowable over the cited prior art for at least this reason. As claim 11 is allowable, the Applicants submit that claims 12-14, which depend from allowable claim 11 are likewise allowable.

As claim 1 and claim 11 are allowable, the Applicants submit that claims 15-16, which depend from allowable claims 1 and 11 are likewise allowable.

With regard to each of the rejections under §103 in the Office Action, it is also respectfully submitted that the Examiner has not yet set forth a *prima facie* case of obviousness. The PTO has the burden under §103 to establish a *prima facie* case of obviousness. In re Fine, 5 U.S.P.Q.2nd 1596, 1598 (Fed. Cir. 1988). Both the case law of the Federal Circuit and the PTO itself have made clear that where a modification must be made to the prior art to reject or invalidate a claim under §103, there must be a showing of proper motivation to do so. The mere fact that a prior art reference could arguably be modified to meet the claim is insufficient to establish obviousness. The PTO can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. Id. In order to establish obviousness, there must be a suggestion or motivation in the reference to do so. See also In re Gordon, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984) (prior art could not be turned upside down without motivation to do so); In re Rouffet, 149 F.3d 1350 (Fed. Cir. 1998); In re Dembiczak, 175 F.3d 994 (Fed. Cir. 1999); In re Lee, 277 F.3d 1338 (Fed. Cir. 2002).

In the Office Action, the Examiner merely states that the present invention is obvious in light of the cited references. See, e.g., Office Action at page 3. This is an insufficient showing of motivation. As discussed above, Yeo teaches an LCD device which operates on completely different principles than the organic electroluminescent device of Yamazaki.

Therefore, the Applicants assert for at least these reasons that claims 1, 5-12, and 14-16 are allowable over the cited prior art.

CONCLUSION

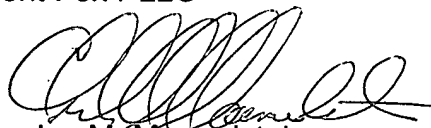
For all of the above reasons, it is respectfully submitted that the claims now pending patentability distinguish the present invention from the cited references. Accordingly, reconsideration and withdrawal of the outstanding rejections and an issuance of a Notice of Allowance are earnestly solicited.

Should the Examiner determine that any further action is necessary to place this application into better form, the Examiner is encouraged to telephone the undersigned representative at the number listed below.

In the event this paper is not considered to be timely filed, the Applicants hereby petition for an appropriate extension of time. The fee for this extension may be charged to our Deposit Account No. 01-2300. The Commissioner is hereby authorized to charge any fee deficiency or credit any overpayment associated with this communication to Deposit Account No. 01-2300, with reference to attorney docket No. 103213-0091.

Respectfully submitted,

Arent Fox PLLC



Charles M. Marmelstein
Attorney for Applicants
Registration No. 25,895

Customer No. 004372
1050 Connecticut Ave., N.W.
Suite 400
Washington, D.C. 20036-5339
Telephone No. (202) 857-8006
Facsimile No. (202) 638-4810